

ISS Payload Human Factors Requirements Compliance Feedback Form

Payload to be evaluated: Observable Protein Crystal Growth Apparatus (OPCGA) Thermal Enclosure System / Experiment Module (TES/EM)

Place and Date of evaluation: Huntsville, AL / Marshal Space Flight Center 2/27/03

Payload Developer POC: Niki Werkheiser Signature: _____

HFIT person performs evaluation: Clark Farthing Signature: _____

Acceptable			Requirements Section and 882 Number	Human Factors/Crew Interface Problem	Suggested Resolution:	Consequences if not fixed	HFIT Disposition
Yes	No	N/A					
	x		3.12.2.1 882-2.1-1	Clearance around OPCGA TES/EM Assembly remains unverified.	Demonstrate the TES/EM Assembly can be installed in the EXPRESS Rack Structure	Will not be able to verify this requirement and the assembly may not be able to fit in the Rack Structure	OPEN to verify when the TES/EM is installed in the rack.
	x		3.12.4.3.15.D 882-2.1-2	Hose/Cable Restraints are not in compliance.	Using Velcro, the cables will be restrained. This will be verified using pictures provided by the payload developer.	Cables and Hoses will possibly protrude and cause interference problems.	OPEN pending verification using pictures.
	x		3.12.7 882-2.1-3	Labeling	Proper labeling verification must be given by the IPLAT group.	Will not be able to verify this requirement and labeling would be disapproved.	OPEN pending IPLAT verification.
	x		3.12.9.5 882-2.1-4	Threaded ends of screws must be capped to protect against sharp threads. On the Minox clamp bolt of the TES/EM, the screw end is not capped.	Using heat shrink tubing over the screw the payload developer will comply with this requirement.	Sharp edges on the end of the screw may lead to crew injury.	OPEN pending verification of use of heat shrink tubing using pictures.

	x		3.12.10 882-2.1-5	Flight crew procedures must be reviewed regarding this requirement.	Review flight crew procedures to verify this requirement.	Flight crew procedures may be incorrect and lead to mistakes made on orbit potentially harming science.	OPEN pending review of flight crew procedures.
	x		3.12.4.4.12 882-2.1-6	Flight crew procedures must be reviewed regarding this requirement.	Review flight crew procedures to verify this requirement.	Flight crew procedures may be incorrect and lead to mistakes made on orbit potentially harming science.	OPEN pending review of flight crew procedures.
	x		3.12.4.4.14 882-2.1-7	Flight crew procedures must be reviewed regarding this requirement.	Review flight crew procedures to verify this requirement.	Flight crew procedures may be incorrect and lead to mistakes made on orbit potentially harming science.	OPEN pending review of flight crew procedures.
	x		3.12.3.1.1 882-2.1-8	Cannot map requirement from the EXPRESS IDD requirement to a OPCGA VRDS requirement. This requirement is listed as Applicable in the OPCGA ICD matrix.	Add OPCGA VRDS requirement that maps to the EXPRESS IDD requirement.	Cannot provide final verification without this documentation,	OPEN pending change of OPCGA PVP Document.
	x		3.12.4.2.8.2 882-2.1-9	Cannot map requirement from the EXPRESS IDD requirement to a OPCGA VRDS requirement. This requirement is listed as Applicable in the OPCGA ICD matrix.	Add OPCGA VRDS requirement that maps to the EXPRESS IDD requirement.	Flight crew procedures may be incorrect and lead to mistakes made on orbit potentially harming science.	OPEN pending change of OPCGA PVP Document.

Closed all open actions

Place and date: _____

Payload Developer POC: _____ Signature: _____

HFIT person / CB Office Crew Representative concurrence: _____ Signature: _____